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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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FROMMER LAWRENCE & HAUG 745 FIFTH AVENUE- 10TH FL. NEW YORK, NY 10151			JONES III, CLYDE H	
			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/966,704	Applicant(s) KONDO ET AL.	
	Examiner Clyde H. Jones III	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3, 7, 12, 13, 21, 22 and 24, are rejected under 35 U.S.C. 102(e) as being anticipated by Hennes (US 6,665,985 B1).

Regarding claims 1, 21 and 23, the following limitations are met by Hennes –

“An audience response determination apparatus for determining an audience response” (show control system 500 - fig. 5A & 5B and theater assembly 100 – fig. 4; col. 6, lines 37-38); and corresponding method; and “data recording medium recording a processing program” (col. 6, lines 64-67; col. 1, line 67 - col. 2, line 1; col. 6, lines 27-33):

“overall state detection means for detecting the overall state of an audience” (Hennes discloses control system 500 – fig. 5A & 5B using two types of sensors, motion-sensors, and microphones (which both read on the “overall state detection means”) to detect general audience motion, and audience sounds (which reads on “the overall state of an audience”); col. 6, lines 45-49);

“individual state detection means for detecting the individual states of the members of the audience” (Hennes further discloses the control system 500 – fig. 5A & 5B using motion-sensors/sound-sensors (which read on the “individual state detection means”) to detect motion/sound (which reads on the “individual states”) of groups of individuals in the audience (which reads on “members”); col. 6, lines 37-45); and

“determination means for determining the audience response on the basis of information detected by said overall state detection means” (col. 6, lines 45-59; in which show control device 520 – fig. 5A & 5B reads on “determination means”) and “by said individual state detection means” (col. 6, lines 37-45) (Hennes’ sensors 510 provide the information/data from which 520 can base the determination of the “audience response”, in which “audience response” reads on the audience’s perception of reality which effects the audience’s interaction and movement within the environment based on the special effects (stimuli) produced by the theater sound/visual projections, e.g., a child audience member “sees” a dolphin, gets immersed in the environment, starts jumping around and yelling in excitement, and the control system determines/senses this excitement (increased motion/sound) based on information from the sensors; col. 1, lines 43-65 & col. 7, line 65 – col. 8, line 2).

Regarding claims 7, 22 and 24 the following limitations are met by Hennes –

“A playback output control system for controlling the output from playback means for the playback and output of data to be seen or heard by an audience” (playback devices 530/projectors 350 and sound system 400 read on “playback means”; show

control system 500 - fig. 5A & 5B and theater assembly 100 – fig. 4) and corresponding method; and “data recording medium recording a processing program” (col. 6, lines 64-67; col. 1, line 67 - col. 2, line 1; col. 6, lines 27-33):

“overall state detection means for detecting an overall state of said audience”
Hennes discloses control system 500 – fig. 5A & 5B using two types of sensors, motion-sensors, and microphones (which both read on the “overall state detection means”) to detect general audience motion, and audience sounds (which reads on “the overall state of an audience”); col. 6, lines 45-49);

“individual state detection means for detecting individual states of the members of said audience” (Hennes further discloses the control system 500 – fig. 5A & 5B using motion-sensors/sound-sensors (which read on the “individual state detection means”) to detect motion/sound (which reads on the “individual states”) of groups of individuals in the audience (which reads on “members”); col. 6, lines 37-45);

“determination means for determining an audience response on the basis of the information detected by said overall state detection means” (col. 6, lines 45-49; in which show control device 520 – fig. 5A & 5B reads on “determination means”) and “by said individual state detection means” (col. 6, lines 41-45) and “by said individual state detection means” (col. 6, lines 37-45) (Hennes’ sensors 510 – fig. 5A & 5B provide the information from which the controls can base the determination of the “audience response”, in which “audience response” reads on the audience’s perception of reality which effects the audience’s interaction and movement within the environment based on the special effects (stimuli) produced by the theater sound/visual projections, e.g., a

Art Unit: 2611

child audience member “sees” a dolphin, gets immersed in the environment, starts jumping around and yelling in excitement, and the show control device 520 determines this excitement (increased movement/sound) based on information from the sensors; col. 1, lines 43-65 & col. 7, line 65 – col. 8, line 2); and

“control means for controlling the operation of said playback means based on the audience response determined by said determination means” (show control device 520 reads on “control means”; col. 6, lines 52-58; col. 7, lines 1-19).

Regarding claim 3, Hennes discloses “overall state detection means collects sounds uttered by the entire audience and detects the overall state of the audience based on the sounds thus collected” reads on control system detecting audience sounds throughout the audience area (col. 6, lines 45-48).

Regarding claim 8, Hennes discloses the “control means selects, on the basis of said audience response determined by said determination means, data to be played back by said playback means” (col. 6, lines 52-58; col. 7, lines 1-19).

Regarding claim 9, Hennes discloses “control means controls, on the basis of said audience response determined by said determination means, signal processing on the data played back by said playback means” (signal processor 540; col. 7, lines 1-5).

Regarding claim 12, Hennes discloses the “overall state detection means detects the overall state of said audience by collecting sounds emitted by the entire audience” (reads on microphone sensors 510 receiving/detecting audience sounds throughout the audience area; col. 6, lines 45-59).

Regarding claim 13, Hennes discloses reduction means (show control device 520) for reducing the effect (motion effects, e.g., horizontal movement and physical sensations) of sound data played back and output by said playback means (sound system 400), wherein overall state detection means detects the overall state of the audience by reducing the effect of said sound data (reads on control system 500 receiving/detecting the audience motion/sound when the control device 520 pans the sound from “left” to “right” or lowers the frequency of the sound to induce a physical sensation and reaction in the audience; col. 7, line 46 – col. 8, line 2).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hennes (US 6,665,985 B1) in view of Huard et al. (US 6,507,353 B1).

Regarding claims 2 and 10, Hennes discloses motion-sensors to detect general (entire) audience motion and position (col. 6, lines 45-47), however fails to disclose “takes an image of the entire audience” and “based on the image taken”.

In an analogous art Huard discloses capturing images to determine changes in body language/gestural signs and record position information about the user (col. 4, lines 41-50; col. 3, lines 22-24; col. 4, lines 12-16) for the purpose of analyzing audience signals for affecting actors 16 – fig. 1 (images displayed in the interactive theater) (col. 3, lines 22-33 & lines 6-8).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Hennes to include the limitations “takes an image of the entire audience” and “based on the image taken” as taught by Huard for the purpose of analyzing audience signals for affecting images generated in response to audience body language and position (col. 3, lines 22-33 & lines 6-8).

Regarding claim 11, Hennes in view of Huard disclose reduction means (Hennes show control device 520 & special effects device 360 – fig. 4) for reducing the effect of video data played back by and output from said playback means (projectors 350 – Hennes, fig. 5A & 5B)(reads on an illusion created by dimming the brightness of the projector), wherein the overall state detection means detects the overall state of the audience by reducing the effect of said video data (reads on control system 500 receiving/detecting the audience motion/sound when the control device 520/special

Art Unit: 2611

effects device 360 creates an illusion of motion by dimming the brightness of the image projected inducing reaction in the audience; col. 7, line 28-45).

5. Claims 4 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hennes (US 6,665,985 B1) in view of Sprout et al. (US 6,409,599 B1).

Regarding claims 4 and 17, Hennes fails to disclose the individual state detection means detects a load applied to each of the audience's seats.

In an analogous art Sprout discloses using seats responsive to a users physical movements (reads on "load") for enhancing the immersive experience (col. 4, lines 37-47).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Hennes to include the further limitation "detects a load applied to each of the audience's seats" as taught by Sprout for enabling the audience to comfortably sit during the performance and still enhance the immersive experience (Sprout - col. 4, lines 37-40).

6. Claims 5, 6, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hennes (US 6,665,985 B1) in view of Howell (US 6,600,477 B1).

Regarding claims 5 and 19, Hennes discloses motion-sensors for detecting individual members of the audience (col. 6, lines 37-39), however he fails to disclose the individual state detection means detects a stepping force as recited in the claims.

In an analogous art Howell, discloses using a pressure sensitive pad 30, - fig. 6 & 7, to detect motion and position information provided by both feet of a standing user (col. 7, lines 20-25 & col. 7, lines 54-56) for detecting larger movements of the body (col. 7, lines 27-31).

It would have been obvious to one of ordinary skill in the art to modify the system of Hennes to include the limitation "detects a stepping force" as taught by Howell for detecting larger movements of the body of audience members (Howell - col. 7, lines 27-31).

Regarding claims 6 and 20, Hennes in view of Howell disclose the further limitations:

"detecting a stepping force provided by the left foot of each member of said audience; and

second stepping force detection means for detecting a stepping force provided by the right foot of each member of said audience" (Howell - col. 7, lines 54-61; in which motion and position information is recorded for each foot for use in applications, e.g., determining the direction a user is standing).

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hennes (US 6,665,985 B1) in view of Needham (US 5,726,701).

Regarding claim 14, Hennes fails to disclose the limitation "comparing the collected sounds with a reference sound level".

In an analogous art Needham discloses determining an audience response ("state") by comparing collected audience signal to a threshold ("reference sound level") for determining the response of the audience (col. 8, lines 14-38; col. 6, lines 9-13);

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Hennes to include the further limitation "comparing the collected sounds with a reference sound level" as taught by Needham for setting the minimum amplitude a collected signal may have to affect a desired effect.

8. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hennes (US 6,665,985 B1) in view of Needham (US 5,726,701) and further in view of Schwartzberg (US 2,593,204).

Regarding claim 15 Hennes in view of Needham disclose varying the threshold based on empirical results to reject background noise (Needham - col. 8, lines 64-67) however, they fail to disclose the further limitation "on the basis of the audience size".

In an analogous art Schwartzberg discloses varying the sensitivity of an audience input microphone based on the size of the audience for obtaining an accurate measure of the sound level based on the fullness of the auditorium (col. 1, line 53 – col. 2, line 20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Hennes in view of Needham to include the limitation "on the basis of the audience size" as taught by Schwartzberg for accurately

Art Unit: 2611

measuring the sound level of an audience based on the degree of audience member density.

9. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hennes (US 6,665,985 B1).

Hennes fails to disclose the limitation “a filter which passes a predetermined audio band” and “based on the sound passed through said filter”.

The examiner takes Official Notice that it is well known in the art to use bandpass filters when processing targeted input sound frequencies in the midst of extraneous unwanted sounds and/or noise, e.g., air conditioning noise, because filtering makes subsequent analyses of the targeted sound more accurate by extracting the targeted sound while attenuating the noise signals. It would be obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Hennes to include the limitations “a filter which passes a predetermined audio band” and “based on the sound passed through said filter” to reject sound frequencies in the theater that could not logically correspond to audience sound because they are above/below the desired frequency range of audience sound, e.g., very high frequency audio played back by the theater sound system or low bass frequencies played back by the theater sound system, and/or low frequency air-conditioning noise, etc.

10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hennes (US 6,665,985 B1) in view of Sprout et al. (US 6,409,599 B1) and in further view of Huard et al. (US 6,507,353 B1).

As for claim 18, Hennes in view of Sprout fail to disclose the further limitations “auxiliary information input means for inputting auxiliary information which is used additionally for determining the audience response”.

In an analogous art Huard discloses using other types (“auxiliary”)sensors such as cameras, handheld devices, and tactile plates to determine changes in the visitors 17 – fig. 1 (audience) state/motion (col. 4, lines 12-23; col. 3, lines 22-26) for the purpose of analyzing changes in audience signals for affecting actors 16 – fig. 1 (images displayed in the interactive theater),e.g., if audience sound or motion is increasing in a specific direction, a “frightened” fish/actor will be programmed to look like it is moving in the opposite direction (col. 3, lines 22-33 & lines 6-8).


It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Hennes in view of Sprout to include the limitations “auxiliary information input means for inputting auxiliary information which is used additionally for determining the audience response” as taught by Huard for the purpose of better/more comprehensive analyses of changes (in amplitude and direction) of audience signals for affecting images generated in response to the changes in audience signals (Huard - col. 4, lines 20-22 & lines 40-50).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clyde H. Jones III whose telephone number is 571-272-5946. The examiner can normally be reached on 9-5:30 p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Grant can be reached on 571-272-7294. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CJ


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